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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,683	07/13/2005	Harald Westermann	03-12-86	3685
39996 7590 ROBERT W. BECKER & ASSOCIATES 707 HIGHWAY 333 SUITE B THERAS, NM 87059-7507			EXAMINER	
			ZIMMERMAN, JOHN J	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			02/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Application No. Applicant(s) 10/538.683 WESTERMANN ET AL. Office Action Summary Examiner Art Unit John J. Zimmerman 1794 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 14-27 is/are pending in the application. 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration. 5) Claim(s) \_\_\_\_\_ is/are allowed. 6) Claim(s) 14-27 is/are rejected. 7) Claim(s) \_\_\_\_\_ is/are objected to. 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on 6/10/2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abevance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Ackno	wledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)⊠ All	b) ☐ Some * c) ☐ None of:
1.	Certified copies of the priority documents have been received.
2.	Certified copies of the priority documents have been received in Application No
3.🖂	Copies of the certified copies of the priority documents have been received in this National Stage
	application from the International Bureau (PCT Rule 17.2(a))

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)	
Notice of References Cited (PTO-892)	4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date
3) X Information Disclosure Statement(s) (PTO/SE/08)	5) Notice of Informal Patent Application
Paper No(s)/Mail Date 20050610.	6)  Other:

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# FIRST OFFICE ACTION

### Preliminary Amendment

 The preliminary amendment filed in this application has been entered. Claims 14-27 are pending in this application.

## Priority

A copy of the certified copy of the foreign priority document has been received in this
National Stage application from the International Bureau (PCT rule 17.2(a)). Applicant,
however, cannot rely upon the foreign priority papers to overcome rejections because a
translation of said papers has not been made of record in accordance with 37 CFR 1.55. See
MPEP § 201.15.

### Drawings

There are no objections to the drawings filed in this application.

### Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
  obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- Claims 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Holowczak (U.S. Patent 6,174,481).
- 7. Holowczak discloses a material formed as an open celled aluminum metal foam having 20 pores-per-inch (e.g. see Example 1). As shown in Example 1, an epoxy filler material can be cast within the open structure (epoxy would be a liquid state as required by claim 20) and then cured (epoxy would be in a solid state as required by claim 17). In addition, further fillers or additives such as aluminum or silicon carbide may be included (e.g. see column 3, lines 53-64).

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Regarding claim 21, the material is positioned within a steel mold (e.g. see Example 1) which fulfills the requirements of a "housing". Regarding claim 25, the material can have a further layer of material on at least one surface (e.g. see column 4, lines 2-5; numeral 16 in Figure 1). Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPO 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

 Claims 22, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holowczak (U.S. Patent 6.174.481).

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9. Holowczak is described in detail in the rejection above. Holowczak teaches that the material can have a further layer of material on at least one surface (e.g. see column 4, lines 2-5; numeral 16 in Figure 1). Holowczak may differ from claim 26 in that Holowczak may not require that the material of the further layer is a metal. In addition, Holowczak may differ from claim 27 in that Holowczak may not require that the material of the further layer is a different material than that of the metal foam. Holowczak, however, does teach that the material of the further layer can be any number of surface layers or surface castings "for lubrication, improved thermal-stability, or resistance to heat abrasion and/or solvent interaction" (e.g. see column 4, lines 2-5). In view of Holowczak's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use metals or any other materials that would have lubrication, improved thermal-stability, or resistance to heat abrasion and/or solvent interaction since Holowczak discloses that any materials having these properties may be used. Regarding claim 22, Holowczak may not require attachment elements for attaching the article to an object. Holowczak, however, clearly discloses forming the aluminum foam containing article in a mold (e.g. see Example 1) and also discloses that the molds formed according the invention can be mounted to an injection molding machine and operation in a normal fashion (e.g. see column 6, lines 37-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include any attachment means to Holowczak's article that would be beneficial in mounting the molded tool to injection molding equipment since this is a stated field for Holowczak's invention (e.g. see column 1, lines 7-20).

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Claims 14 and 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in
the alternative, under 35 U.S.C. 103(a) as obvious over Sugimoto (U.S. Patent 6,103,397).

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11. Sugimoto discloses forming an open celled nickel metal foam having 30 pores-per-inch (e.g. see column 6, lines 31-57). As described by Sugimoto, an aluminum filler material can be cast within the open structure (molten aluminum would be a liquid state as required by claim 20 and once solidified would be in a solid state as required by claim 17). In addition, further ceramic fillers may be included in the material (e.g. see claims 1 and 3; column 4, line 65 column 5, line 39). Regarding claim 21, the material is positioned within a mold (e.g. see paragraph spanning columns 5 and 6) which fulfills the requirements of a "housing". Regarding claim 25, the material can have a further layer of lubrication on at least one surface (e.g. see column 7, lines 5-19). Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPO 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPO 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the

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preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

- Claims 14-22 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tsang (U.S. Patent 4,605,595).
- 13. Tsang discloses forming friction articles (e.g. disc brake pads) from an open celled metal foam having 14-18 pores-per-inch (e.g. see column 4, lines 6-17). As described by Tsang (e.g. column 4, lines 18-35), a slurry of filler material, friction modifiers, resin and curing agent can be cast within the open structure (the slurry would be a liquid state as required by claim 20 and once cured would be in a solid state as required by claim 17). The fillers may be include whiting, barytes, talc, etc..., and the friction modifiers include coke, iron powder, etc..., (e.g. see column 3, lines 19-34). Regarding claims 21 and 22, disc brake pads are conventionally placed within further structures (e.g. brake assemblies) that are further placed within further structures (e.g. cars) and therefore there are multiple housings and attachment elements that would be understood by one of ordinary skill in the art to be part of the articles of Tsang in use. Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the

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preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

- Claims 14 17 and 20-27 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Elias (U.S. Patent Application Pub. 2003/0143958).
- 15. Elias discloses forming modules from an open celled duocelan metal foam having a cell density of 5, 10, 20 and 40 pores-per-inch and duocelan aluminum foam may be further plated with materials such as adhesives, metal, etc..., (e.g. see paragraph [0047]). Regarding claims 17 and 20, the metal foam is filled with a phase change material that would be liquid or solid

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depending on the particular phase (e.g. see paragraph [0048], [0051]-[0052]). Regarding claims 21-23, the material is placed in a housing having attachment elements and is formed in a sandwich construction (e.g. see Figure 8). Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao. 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

 Claims 14-22 and 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Galligan (U.S. Patent Application Pub. 2004/0009106).

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17. Galligan discloses forming modules from an open celled metal foam having a cell density of in the claimed range (e.g. see paragraph [0068]). Regarding claims 25-27, the material may be further coated with another metal (e.g. see paragraph [0072]). Regarding claims 17-19, the metal foam contains metal, ceramic and mineral catalyst and support materials (e.g. see paragraphs [0104]-[0113]). Regarding claim 20, the materials may be applied in a slurry (e.g. see paragraphs [0112]-[0113]). Regarding claims 21-23, the material is placed in a housing (e.g. Figure 3H) and would be understood by one of ordinary skill in the art to have attachment elements for incorporation into the machinery of Figures 7A-7C. Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPO 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPO 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior

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art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

- Claims 14-15 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zarganis (U.S. Patent Application Pub. 2003/0085050).
- 19. Zarganis discloses forming articles from an open celled metal foam having a cell density of 10 and 40 ppi (e.g. see paragraph [0030]; Figure 2). Regarding claim 21, the material is placed in a housing (e.g. Figures 3 and 4). Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed

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invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

- 20. Claims 14-27 are rejected under 35 U.S.C. 103(a) as obvious over Terry (U.S. Patent Application Pub. 2006/0048640) in view of Duocel (Duocel Aluminum Foam brochure, four pages, date of July 4, 1998 provided by web.archive.org) or Elias (U.S. Patent Application Pub. 2003/0142477).
- 21. Terry discloses blast and ballistic protection materials formed as sandwich structures that can use stochastic metal foams such as Duocel material as the core (e.g. see paragraph [0020]). The Duocel brochure is cited to show that Duocel metal foam material is an open celled aluminum metal foam provided in cell sizes of 5, 10, 20 and 40 pores-per-inch (e.g. see second page of the brochure). Elias (e.g. see paragraph [0019]) is further cited to confirm the fact that Duocel metal foam material is an open celled aluminum metal foam provided in cell sizes of 5, 10, 20 and 40 pores-per-inch. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use cell sizes of 5-40 pores-per-inch as the core of Terry since these are the cell sizes of the materials specifically suggested by Terry for the core. In any event, in view of the purpose of Terry's material as blast and ballistic protection material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the core material specifically for its effectiveness in stopping projectiles associated

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with this purpose. Ceramic fillers can be included in the core by slurry (e.g. liquid) and brazes (e.g. metal) may also be incorporated to bond (e.g. would applied as a metal coating to the bonding surfaces) or fill or partially fill the structure (e.g. see paragraph [0022]). Multiple cores, face sheets and sub-cores may be stacked upon one another (e.g. see paragraph [0022]). Regarding claim 24, in view of the function of the material as a blast and ballistic protection system, the inclusion of spaces between the layers to prevent transmittance of force between layers would be obvious. Regarding claim 21, the material is positioned between further materials (e.g. see paragraph [0022]) which fulfills the requirements of introduction into a "housing". In addition, it would have been obvious to one of ordinary skill in the art to enclose the protective layered structures of Terry in housings to prevent separation of the layers, aid in handling and transport, and provide a finished appearance. Regarding claim 22, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use attachment elements to secure the blast and ballistic protection system of Terry to structures in need of protection since an unsecured panel would not stay in place and would also pose a hazard. Regarding the claim recitation of a "protection module" (e.g. claim 14, line 1) and the intended use "for protecting objects against threats in the form of hollow loads" (e.g. claim 14, lines 1-2), the recitations have not been given patentable weight because the recitations occur in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPO 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The

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preambles of the pending claims merely recite the purpose and intended use of the structures as a protection module for protection against threats in the form of hollow loads and the bodies of the claims do not depend on these purpose and intended use recitations in the preamble for completeness. In addition, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structures of the reference are certainly capable of the intended use even if not intended for this purpose.

#### Conclusion

- The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- 23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Rena Dye can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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24. Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John J. Zimmerman Primary Examiner Art Unit 1794

/John J. Zimmerman/ Primary Examiner, Art Unit 1794

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January 31, 2008